

Chemical Analysis Report

SW-DIST-2018-12-13-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

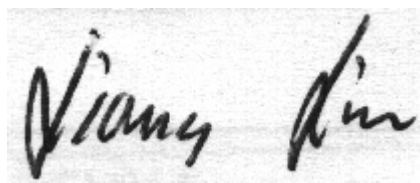
Event Description: **Pinellas LR7-McKay Creek**
Request ID: **RQ-2018-12-10-06**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 04-JAN-2019 16:13

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical group are included in this report: Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: MCKAY CREEK @ BLUFF DR

Collection Date/Time: 12/12/2018 12:22

Field ID: G5SW0145

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2048659	EPA 8321B	2,4-D	0.0028	I	ug/L	P356147	
		Sucralose**	0.79	Q	ug/L	P356284	
		Bentazon	0.021		ug/L	P356147	
		MCP	0.0024	I	ug/L	P356147	
		Triclopyr**	0.0040	U	ug/L	P356147	
		Imidacloprid	0.014	J	ug/L	P356147	MS
		Diuron	0.0020	U	ug/L	P356147	
		Pyraclostrobin**	0.0020	U	ug/L	P356147	
		Primidone**	0.0061	I	ug/L	P356147	
		Linuron	0.0040	U	ug/L	P356147	
		Acetaminophen**	0.0080	UJ	ug/L	P356147	MS
		Fenuron	0.016	U	ug/L	P356147	
		Imazapyr**	0.024		ug/L	P356147	
		Carbamazepine**	9.8E-04	I	ug/L	P356147	
		Fluridone**	0.086		ug/L	P356147	
		Hydrocodone**	8.0E-04	U	ug/L	P356147	
		Naproxen**	0.0080	U	ug/L	P356147	
		Ibuprofen**	0.020	U	ug/L	P356147	
		Acesulfame K**	0.10	U	ug/L	P356284	

Ref. Method and Comment:

EPA 8321B: Refer to the narrative for an explanation of QC Codes.

EPA 8321B: "Q" - Sample analysis expired due to technical difficulty.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P356147

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P356284

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P356147

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	74.8		P	40 - 150
Acetaminophen	144		P	30 - 150
Bentazon	86.9		P	30 - 150
Carbamazepine	104		P	40 - 150
Diuron	96.8		P	40 - 150
Fenuron	137		P	40 - 150
Fluridone	124		P	40 - 150
Hydrocodone	113		P	40 - 150
Ibuprofen	68.1		P	40 - 150
Imazapyr	106		P	40 - 150
Imidacloprid	102		P	40 - 160
Linuron	91.9		P	40 - 150
MCPP	96.3		P	40 - 150
Naproxen	68.8		P	40 - 150
Primidone	111		P	40 - 150
Pyraclostrobin	70.7		P	40 - 150
Triclopyr	50.5		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P356284

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	104		P	40 - 150
Sucralose	107		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P356147

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048659	2,4-D	91.9	99.6	P/P	40 - 150
2048659	Acetaminophen	129	153	P/F	30 - 150
2048659	Bentazon	39.5	43.4	P/P	30 - 150
2048659	Carbamazepine	81.7	91.3	P/P	40 - 150
2048659	Diuron	70.5	81.1	P/P	40 - 150
2048659	Fenuron	110	126	P/P	40 - 150
2048659	Fluridone	105	121	P/P	40 - 150
2048659	Hydrocodone	99.8	114	P/P	40 - 150
2048659	Ibuprofen	59.5	70.6	P/P	40 - 150
2048659	Imazapyr	83.4	102	P/P	40 - 150
2048659	Imidacloprid	185	220	F/F	40 - 160
2048659	Linuron	77.3	80.7	P/P	40 - 150
2048659	MCPP	113	123	P/P	40 - 150
2048659	Naproxen	69.3	54.7	P/P	40 - 150
2048659	Primidone	96.1	109	P/P	40 - 150
2048659	Pyraclostrobin	88.0	85.3	P/P	40 - 150
2048659	Triclopyr	66.2	63.5	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P356284

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048940	Acesulfame K	78.3	82.9	P/P	40 - 150
2048940	Sucralose	105	109	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P356147

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048659	2,4-D	7.78	Spike	P	0 - 30
2048659	Acetaminophen	17.0	Spike	P	0 - 30
2048659	Bentazon	5.65	Spike	P	0 - 30
2048659	Carbamazepine	11.0	Spike	P	0 - 30
2048659	Diuron	14.0	Spike	P	0 - 30
2048659	Fenuron	14.1	Spike	P	0 - 30
2048659	Fluridone	7.67	Spike	P	0 - 30
2048659	Hydrocodone	13.4	Spike	P	0 - 30
2048659	Ibuprofen	17.0	Spike	P	0 - 30
2048659	Imazapyr	15.1	Spike	P	0 - 30
2048659	Imidacloprid	16.1	Spike	P	0 - 30
2048659	Linuron	4.29	Spike	P	0 - 30
2048659	MCP	7.54	Spike	P	0 - 30
2048659	Naproxen	23.7	Spike	P	0 - 30
2048659	Primidone	11.6	Spike	P	0 - 30
2048659	Pyraclostrobin	3.09	Spike	P	0 - 30
2048659	Triclopyr	4.17	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P356284

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048940	Acesulfame K	5.65	Spike	P	0 - 30
2048940	Sucralose	3.46	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 2048659

Field Sample ID: G5SW0145

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	82.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	132	P	30 - 160
EPA 8321B	Carbamazepine-d10	81.3	P	30 - 160
EPA 8321B	Diuron-d6	64.5	P	30 - 160
EPA 8321B	Endothall-d6	109	P	40 - 160
EPA 8321B	Endothall-d6	109	P	40 - 160
EPA 8321B	Ibuprofen-d3	84.7	P	60 - 160
EPA 8321B	Primidone-d5	114	P	30 - 160
EPA 8321B	Sucralose-d6	117	P	40 - 160
EPA 8321B	Sucralose-d6	117	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A88420
Included Lab Sample IDs: 2048659

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	106	113	P/P	60 - 150

Reference Method: EPA 8321B
Run ID: A88541
Included Lab Sample IDs: 2048659

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	93.6	87.0	P/P	50 - 150
Acetaminophen	119	159	P/P	60 - 160
Bentazon	129	111	P/P	50 - 160
Carbamazepine	115	116	P/P	60 - 150
Diuron	116	106	P/P	60 - 150
Fenuron	109	121	P/P	60 - 150
Fluridone	106	117	P/P	60 - 160
Hydrocodone	97.9	102	P/P	60 - 150
Ibuprofen	100	91.6	P/P	50 - 160
Imazapyr	109	98.1	P/P	50 - 150
Imidacloprid	101	97.5	P/P	60 - 150
Linuron	117	113	P/P	60 - 150
MCPP	91.7	83.5	P/P	50 - 150
Naproxen	91.1	51.9	P/P	50 - 160
Primidone	101	102	P/P	60 - 150
Pyraclostrobin	114	118	P/P	60 - 150
Triclopyr	93.7	84.4	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A88606
Included Lab Sample IDs: 2048659

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	112	114	P/P	60 - 160

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision LCS	SMP	MS
EPA 8321B	2,4-D	74.8	91.9	99.6			7.78
	Acesulfame K	104	78.3	82.9			5.65
	Acetaminophen	144	129	153			17.0
	Bentazon	86.9	39.5	43.4			5.65
	Carbamazepine	104	81.7	91.3			11.0
	Diuron	96.8	70.5	81.1			14.0
	Fenuron	137	110	126			14.1
	Fluridone	124	105	121			7.67
	Hydrocodone	113	99.8	114			13.4
	Ibuprofen	68.1	59.5	70.6			17.0
	Imazapyr	106	83.4	102			15.1
	Imidacloprid	102	185	220			16.1
	Linuron	91.9	77.3	80.7			4.29
	MCPP	96.3	113	123			7.54
	Naproxen	68.8	69.3	54.7			23.7
	Primidone	111	96.1	109			11.6
	Pyraclostrobin	70.7	88.0	85.3			3.09
	Sucralose	107	105	109			3.46
	Triclopyr	50.5	66.2	63.5			4.17

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2048659
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2048659

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	12/13/2018	12/18/2018 11:00	Rebecca Ware	01/02/2019 18:39	Rebecca Ware	2048659
	12/13/2018	12/18/2018 11:00	Rebecca Ware	12/18/2018 17:43	Rebecca Ware	2048659
	12/13/2018	12/19/2018 12:00	Hoor Shaik	12/27/2018 00:56	Juyoung Kim	2048659